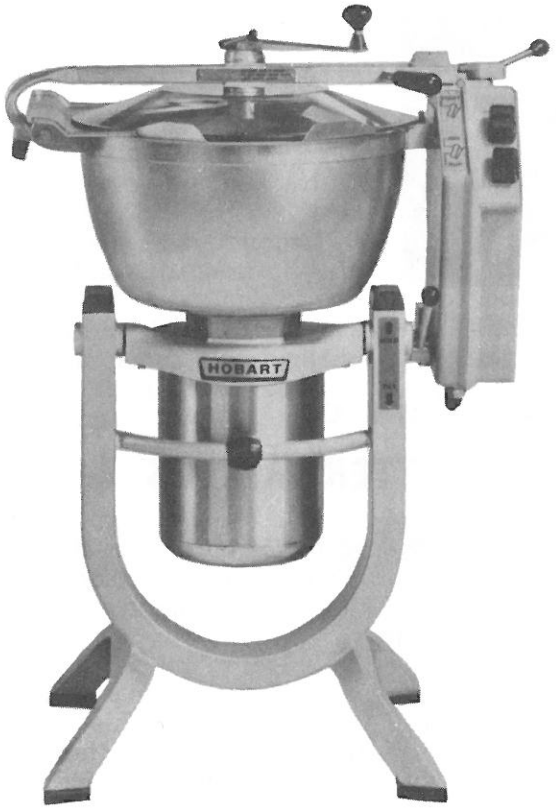
HOBART

# INSTRUCTION MANUAL

## ... with Replacement Parts




# MODELS HCM-300 & HCM-450 CUTTER/MIXERS

ML-19519 HCM-300
ML-19520 HCM-450

A product of HOBART CORPORATION TROY, OHIO 45374

FORM 12673A (Rev. 12-78) (Supsds. F.12673, 2-78)

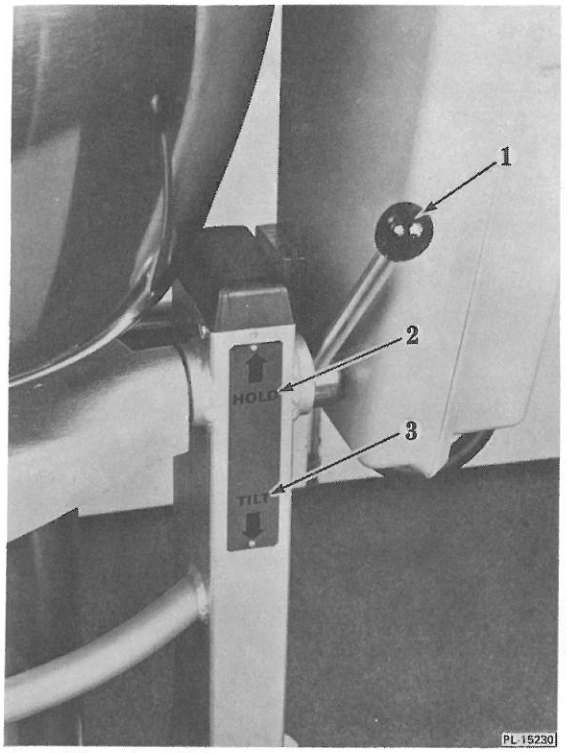



Fig. 1

# Installation, Operation and Care of MODELS HCM-300 AND HCM-450 CUTTER/MIXERS

## GENERAL

The HCM-300 and HCM-450 cutter/mixers are different only in capacity and motor specifications. Both models have a single speed, 1150 R.P.M., totally enclosed externally fan cooled motor. The models are available in dual voltage ratings of 200 Volts, 60 Hz., 3 Phase or 230/460 Volts, 60 Hz., 3 Phase. The motors have inherent solid state thermal overload protection.

All machines are equipped with a 6 foot, U.L. listed flexible rubber jacketed cable with plug. The plug is provided according to the rated voltage of the machine and must be coupled with a compatible receptacle. The receptacle is furnished as standard equipment.

The heavy duty motor supplies power directly to the cut/mix shaft assembly or the knead/mix shaft assembly in the bowl. The scimitar knives are at a fixed angle and rotate at motor speed. The knives pull the product down through the central portion of the bowl, slicing it in the process. The product is then returned up the sides of the bowl by centrifugal force. A vortex is created inside the bowl, which keeps the entire load in motion. The cutting and mixing action begins the instant the machine is turned on.

When cutting certain products the action is supplemented by a hand operated baffle. This baffle turns the product over in rolling motion, moving the product into the knives. The bowl, knives and baffle are constructed of stainless steel.

The models HCM-300 and HCM-450 have a rectangular, tubular frame. The frame is finished in a durable epoxy paint. All models are equipped with non-marking rubber feet.

The bowl and motor are a single unit which is pivot mounted on the frame. The pivot point is displaced off center to provide a higher pour point when the bowl is tilted to the horizontal position for unloading. The tilt operation is assisted by a counterbalance spring system to provide the operator with control of the unit at all times.

A "hold-tilt" handle (1, Fig. 1) is provided to clamp the bowl in the upright position during



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operation by placing it in the "HOLD" position (2, Fig. 1). When the handle is placed in the "TILT" position (3, Fig. 1) the unit can be easily pivoted. It will maintain any degree of tilt desired when the unit is released, WITHOUT resetting to "HOLD".

The knead/mix shaft assembly, which is used for general non-cutting applications, is stainless steel construction.

The cut/mix or knead/mix shaft assemblies are mounted directly on the motor shaft. The motor shaft extends through the bottom of the bowl. The cut/mix assembly or knead/mix assembly are fastened by inserting a non-threaded eccentric locking knob into the accessory, over the motor shaft and rotating locking knob in either direction.

Three separate seals are used to prevent fluids from leaking from the bowl into the motor. An easily removable face seal is in the bottom of the bowl. An "O" ring seal is under the combination flinger-brake cover under the bowl. An oil seal is pressed into the motor housing.

The cover of the HCM-300 and HCM-450 is clear polycarbonate. This high-impact resistant plastic permits the operator constant visual evaluation of the degree of cutting and mixing achieved during operation. A wiper is provided on the mixing baffle which keeps the cover clear during the processing of any liquid. The wiper provides a method of scraping the cover BEFORE opening. This reduces product loss and spillage on the drip pan with the cover open.

Push button controls of magnetically operated start and stop switches and a jog selector switch are provided. These switches are located on the control box cover, have no moving seals and are watertight.

Two casters are available as optional equipment to replace two rubber feet. These casters permit moving the cutter/mixer easier from one location to another. Always install the casters (1, Fig. 2) on the right side under the control box.

## SAFETY

An electro-mechanical interlock switch prevents the HCM-300 and HCM-450 from operating unless the cover is closed and latched. An interlock switch prevents the cutter/mixer from running if the bowl is tilted more than 20 degrees from a vertical position. A centrifugal brake stops the knives upon any power interruption.

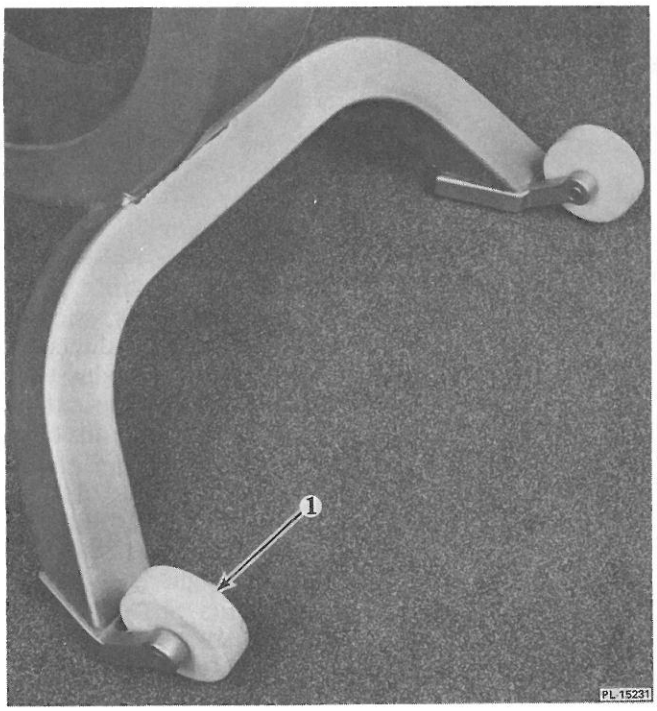



Fig. 2

## INSTALLATION

After removing cutter/mixer from skid, install feet to prevent it from moving during operation. To install feet, first apply a bead of silastic sealer around the edge of each leg. Next, insert the feet in their proper location. Install bolts and washers, tighten bolts to hold the feet in place.

Place the cutter/mixer in the desired location. **Warning:** Check bowl to make sure it is empty and always remove cut/mix shaft assembly or knead/mix shaft assembly. Close and latch cover. Connect power supply cord to the receptacle.

Set selector switch (3, Fig. 4) to the "JOG" position. Press "START" switch (2, Fig. 4) and release. The motor will run only when the "START" switch is depressed. Check shaft rotation. Motor shaft should rotate in a clockwise direction as indicated by the arrow (1, Fig. 3). If rotation is incorrect, disassemble plug and reverse any two wires except the ground wires.

To run cutter/mixer continuously, set the selector switch to "RUN" and press the "START" switch. Press "STOP" switch (1, Fig. 4) to discontinue operation.

On 230/460 voltage models, an identification plate is mounted below the machine data plate. This plate contains electrical data on both sides. If the unit is rewired to change voltage, this plate must be reversed to indicate that voltage.

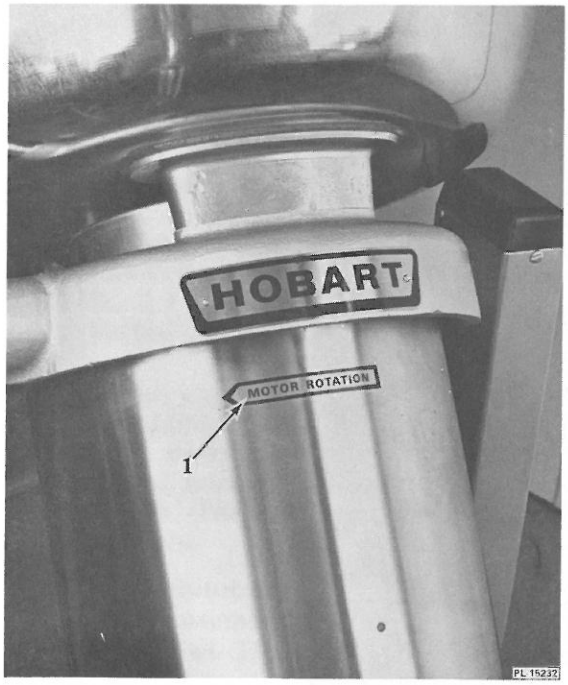



Fig. 3

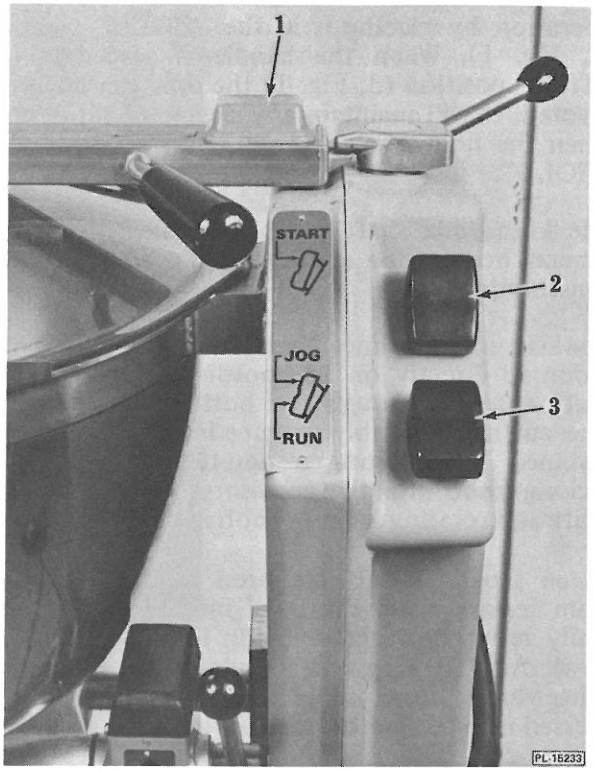



Fig. 4

## OPERATION

Place bowl in the vertical position and set handle (1, Fig. 1) to the "HOLD" position. Move handle to align it with "HOLD" arrow. No extreme pressure is required to set handle.

**Select the attachments needed for the desired application.**

1. The cut/mix assembly is used for all cutting operations, such as meat products, vegetables, cheese products, pastry and cake products, and some doughs that require both cutting and mixing. The cut/mix assembly is also used for processing mixtures such as salad dressing.

2. The knead/mix shaft assembly is used for general non-cutting applications and specifically for bakery products, such as yeast doughs.

3. For information on using mixing baffle, see paragraph four in "GENERAL" section.

4. The strainer basket is used for processing vegetables and fruits which are normally cut

while suspended in water. The strainer basket permits the operator to remove the processed product from the bowl. The water is then drained from the vegetable back into the bowl and can be used in another operation.

**Before installing attachments, check the following:**

1. **The electrical power supply has been disconnected.**

2. Bowl Seal: Insert the black seal ring (1, Fig. 5) in the white seal retainer (2, Fig. 5) with the thin part extending from the end opposite the taper. With thin part down, install seal with retainer over the motor shaft. Seat seal (1, Fig. 6) securely against bottom of bowl.




Fig. 5

3. Strainer Basket: If strainer basket is to be used, insert it in the bowl over the motor shaft and seal. NOTE: Never use strainer basket and mixing baffle at the same time.

4. Cut/Mix Shaft Assembly: Place the cut/mix shaft assembly on the motor shaft. Seat the square drive at the base. Place the clear plastic knob into the cut/mix shaft and align slots (1, Fig. 7). Seat the knob on the top of the shaft and turn either direction until tight.

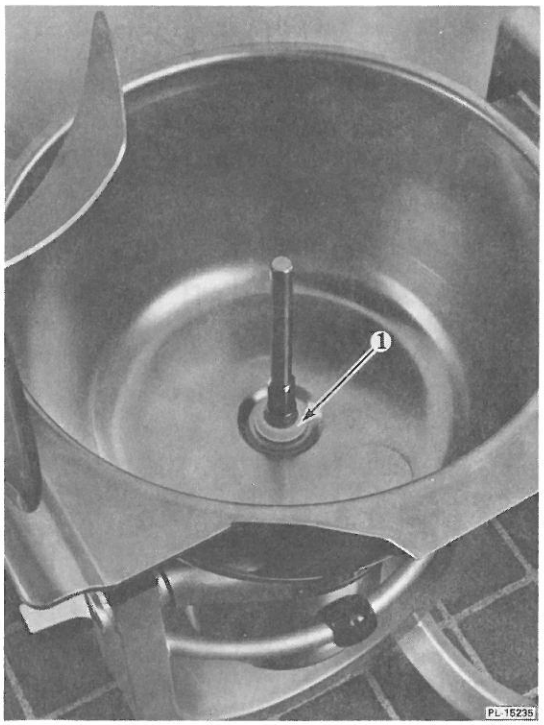



Fig. 6

5. Knead/Mix Shaft Assembly: Use the same procedure to attach the knead/mix shaft assembly as described in the above paragraph.

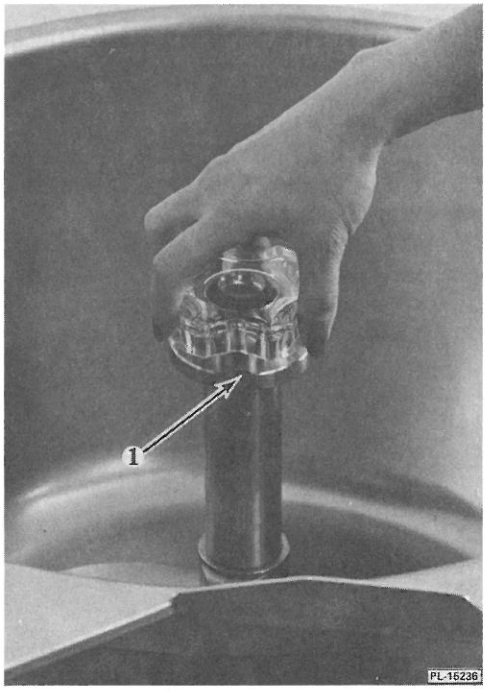



Fig. 7

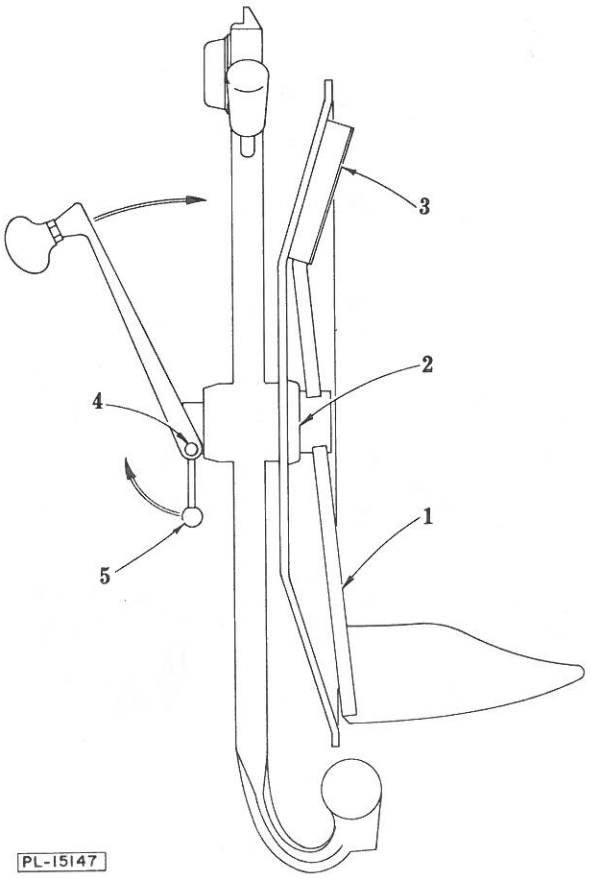



Fig. 8

6. Mixing Baffle: Hold the mixing baffle (1, Fig. 8) with right hand and insert center shaft through bearings in center of lid (2, Fig. 8). The mixing baffle handle retains the mixing baffle with a locking device (5, Fig. 8). Swing the locking device knob away from the body of the handle. Place the cross pin in the notch of the baffle shaft (4, Fig. 8). Move the locking device knob toward the mixing baffle knob until locking action is encountered. This supports and secures the baffle to the lid.

7. Lid Scraper: If lid scraper (3, Fig. 8) is used, slip it over the mixing baffle extension bar directly below the handle inside the lid.

**Loading Machine:**

1. Move "hold-tilt" handle to "HOLD" to lock bowl in vertical position.

2. Although in most cases all ingredients are placed in the bowl at one time, there are exceptions, and various methods are used for adding ingredients.

When products are to be cut and mixed together cut the harder products first, then add the softer products for final cutting and mixing. When cutting meat with high gristle and tendon content, remove them by hand before processing; or grind them through a Hobart grinder (using 1/8" grinder plate) after vertical cutter/mixer processing.

In processing finely cut (or emulsified) products from large or bulky items (such as loaves of bread, large chunks of meat, etc.) limit product length. Since the product must be free to drop into cutting blades, the distance must be less than from center shaft to side of bowl. Operate briefly to break down large chunks, then add balance of load to reach capacity. When adding large chunks, remove mixing baffle.

In baking applications, always add the shortening last. This prevents the shortening from smearing bottom of bowl. Dissolve sugar in liquid before adding other products.

When cutting vegetables in water (most vegetables cut better in water), first fill the bowl about one half full of cold water, add vegetables to suit (see strainer basket usage). Always distribute load evenly when cutting minimum amounts.

For more detailed information on processing various products, see separate use and care booklet.

3. Close and latch the cover by grasping the lid handle (1, Fig. 9) with the left hand. Press lid




Fig. 9

handle down while turning the latch (2, Fig. 9) counterclockwise until the lid lock is engaged.

4. Process the desired product.

**Unloading Machine:**

1. Push the "STOP" switch (1, Fig. 4) and then open cover. This stops the knives and power to the motor is cut off.

2. Remove cut/mix attachment before emptying bowl. The knead/mix shaft assembly does not have to be removed.

3. Scrape bowl cover (when required) before tipping bowl.

4. For products cut in water, lift out the strainer basket while the bowl is in the vertical position.

5. Move the "hold-tilt" handle to "TILT" (3, Fig. 9).

6. Always open cover before tilting bowl from the vertical position. The bowl may be tilted to any desired position depending upon the type of load. Grasp the lid handle (1, Fig. 10) and cautiously tip bowl by pulling toward you, emptying contents into a container.




Fig. 10

7. After product has been removed, return bowl to vertical position. Put "hold-tilt" handle in "HOLD" position and proceed to run another load or clean machine.

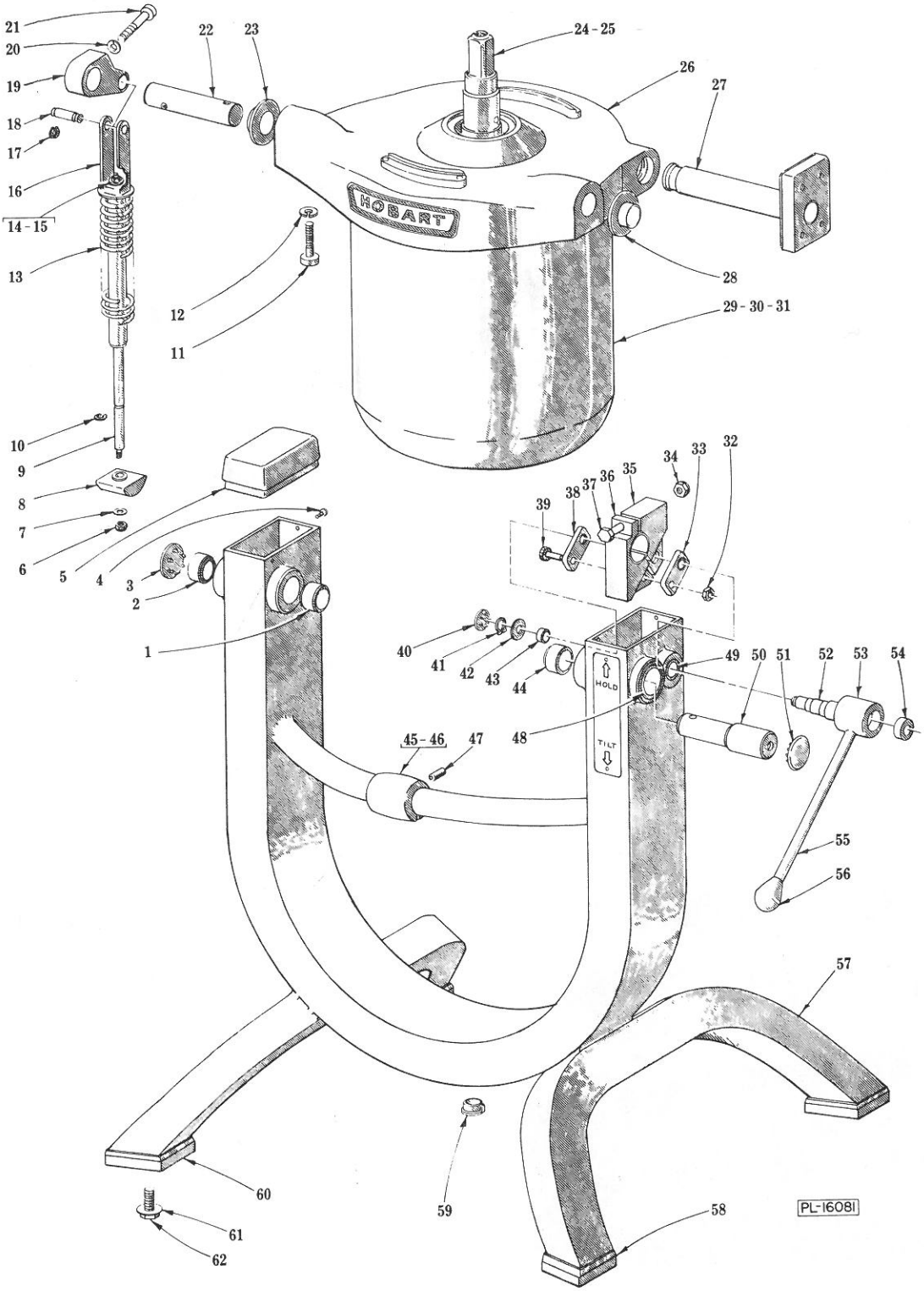
**NOTE:** Be careful opening lid when baffle is not in place. The lid could flip up since the lid counterbalance system is designed to work against the cover and baffle.

## CLEANING

1. **DISCONNECT FROM ELECTRICAL POWER SUPPLY.**
2. Remove cut/mix or knead/mix attachment and mixing baffle. Do not leave the attachments on motor shaft for storage.
3. Fill bowl with one gallon of warm water and add a SMALL amount of a mild detergent.
4. Wash inside of bowl and underneath side of cover, using a soft cloth.
5. Wash the attachments and mixing baffle.
6. Remove wash water from the bowl.
7. Pour one gallon of cold rinse water into the bowl.
8. Rinse attachments and mixing baffle with water in bowl and remove them to dry.
9. Rinse the inside of bowl cover and bowl.
10. Remove rinse water from bowl.
11. Remove bowl seal by lifting seal up and off shaft. Separate seal from retainer and wash both parts. Reassemble seal and retainer (Fig. 5). Be sure bowl area is properly cleaned before reinstalling seal. Replace seal on shaft, push down firmly and twist to seal it against bottom of bowl. NOTE: When processing various types of products, it may be desirable to clean seal between loads.
12. Use a clean cloth to dry the bowl cover and bowl.

## LUBRICATION

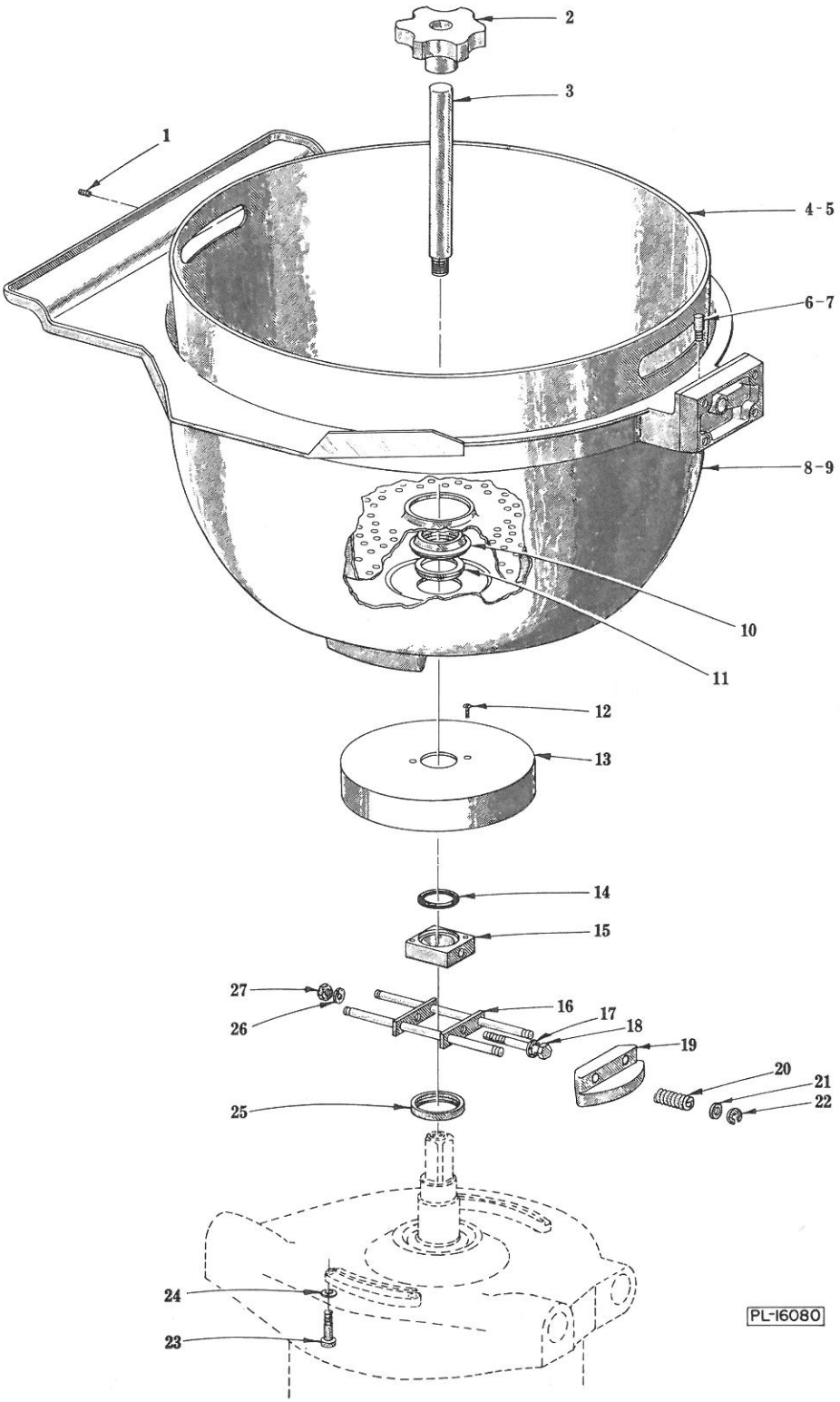
The prelubricated motor bearings should be checked by a Hobart technician every three to four years under normal use. No other lubrication is required.




MOTOR AND FRAME UNIT

# MOTOR AND FRAME UNIT

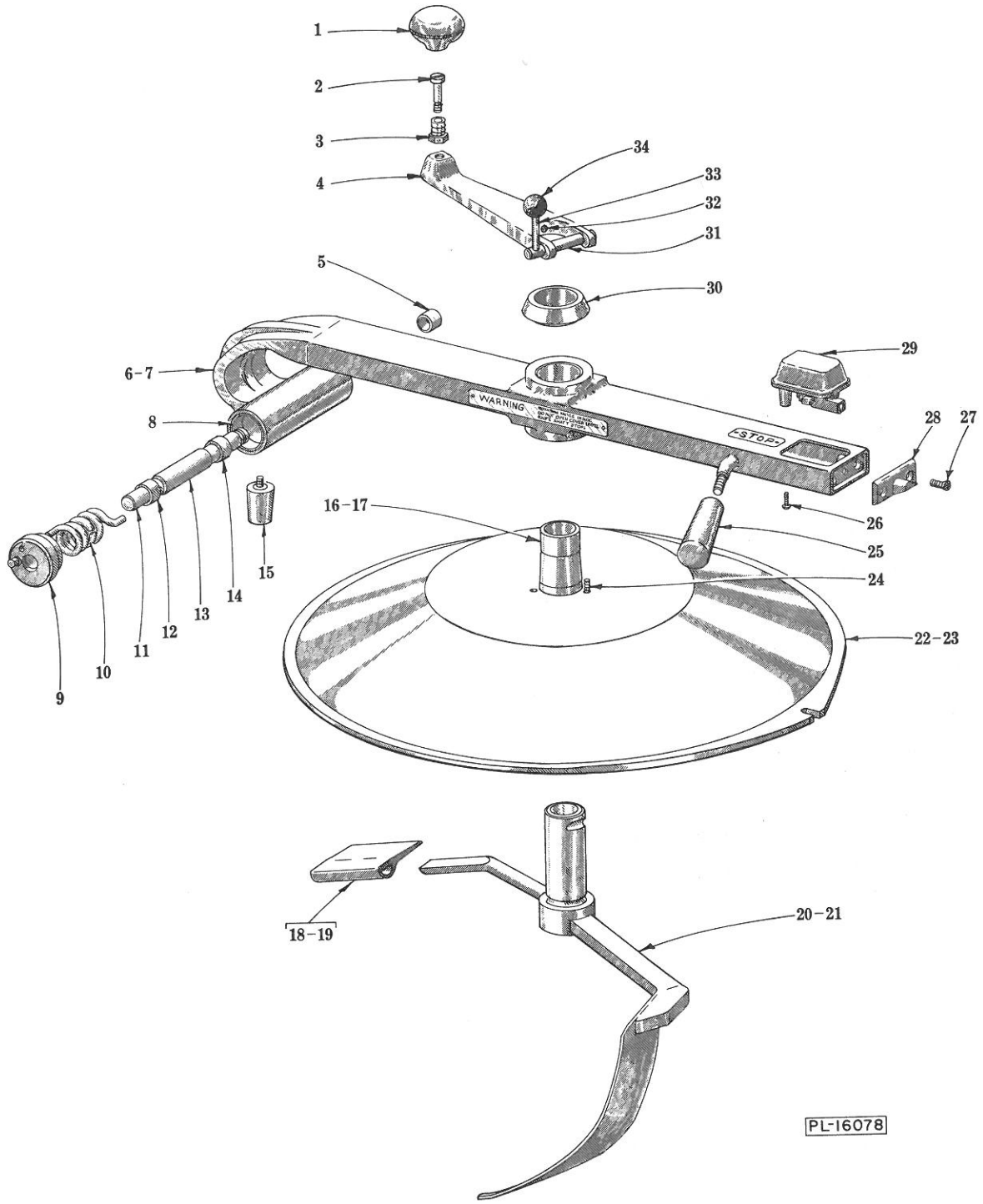
| ILLUS. PL-16081 | PART NO. | NAME OF PART | AMT. |
|---|---|---|---|
| 1 | D-108394-41 | Sleeve Bearing (1.25" O.D.) | 1 |
| 2 | D-108394-41 | Sleeve Bearing (1.25" O.D.) | 1 |
| 3 | PB-4-4 | Plug Button (1-1/4") | 1 |
| 4 | SD-33-4 | Self-Tapping Screw - #10-16 x 3/8" Rd. Hd., Type 25 | 4 |
| 5 | C-122167 | Cap - Tube | 2 |
| 6 | NS-31-20 | Stop Nut - 1/4"-20 "Elastic" | 1 |
| 7 | WS-3-49 | Washer | 1 |
| 8 | B-122185 | Pivot Pad & Bearing Assy. | 1 |
| 9 | C-122183 | Rod - Spring Guide | 1 |
| 10 | RR-4-19 | Retaining Ring | 1 |
| 11 | SC-92-62 | Cap Screw - 3/8"-16 x 1-1/2" Soc. Fil. Hd. | 2 |
| 12 | WL-4-6 | Lock Washer - 3/8" x .141" x .094" | 2 |
| 13 | C-122184-1 | Spring - Compression | 1 |
| 14 | NS-31-20 | Stop Nut - 1/4"-20 "Elastic" | 1 |
| 15 | WS-3-49 | Washer | 1 |
| 16 | C-122179 | Yoke & Spring Guide Assy. | 1 |
| 17 | RR-4-25 | Retaining Ring | 2 |
| 18 | B-122189 | Shaft - Yoke | 1 |
| 19 | C-122187 | Crank & Bearing Assy. | 1 |
| 20 | WL-4-6 | Lock Washer - 3/8" x .141" x .094" | 1 |
| 21 | SC-110-8 | Cap Screw - 3/8"-16 x 1-3/4" Soc. Hd. | 1 |
| 22 | C-122177 | Shaft - Left Pivot | 1 |
| 23 | B-122190 | Spacer - Frame | 1 |
| 24 | ML-19370 | Motor (HCM-300) (See Separate Motor Parts Sheet) | 1 |
| 25 | ML-19371 | Motor (HCM-450) (See Separate Motor Parts Sheet) | 1 |
| 26 | A-123907 | Bearing Bracket & Logo Assy. | 1 |
| 27 | D-122199 | Tube & Plate Assy. | 1 |
| 28 | B-122190 | Spacer - Frame | 1 |
| 29 | E-122175-2 | Motor Cover Assy. (HCM-300) | 1 |
| 30 | E-122175-1 | Motor Cover Assy. (HCM-450) | 1 |
| 31 | SC-21-91 | Mach. Screw - #8-32 x 5/16" Rd. Hd. | 3 |
| 32 | NS-13-14 | Full Nut - 5/16"-18 Hex Fin. | 1 |
| 33 | B-122299 | Front Link & Bushing Assy. | 1 |
| 34 | NS-31-34 | Stop Nut - 3/8"-16 "Elastic" | 1 |
| 35 | C-123560 | Clamp Assy. (Right) | 1 |
| 36 | C-122297 | Clamp Assy. (Left) | 1 |
| 37 | SC-110-9 | Fin. Bolt - 3/8"-16 x 3" Hex Hd. | 1 |
| 38 | B-122298 | Back Link & Bushing Assy. | 1 |
| 39 | B-122269 | Screw - Special | 1 |
| 40 | PB-4-2 | Plug Button (15/16") | 1 |
| 41 | RR-4-5 | Retaining Ring | 1 |
| 42 | WS-29-19 | Washer | 1 |
| 43 | D-108394-37 | Sleeve Bearing (.628" O.D.) | 1 |
| 44 | D-108394-41 | Sleeve Bearing (1.25" O.D.) | 1 |
| 45 | B-122161 | Bumper - Stop (HCM-450) | 1 |
| 46 | B-122166 | Bumper - Stop (HCM-300) (Not Shown) | 1 |
| 47 | RP-6-1 | Rollpin - 3/8" Dia. x 3/4" Lg. | 1 |
| 48 | D-108394-43 | Sleeve Bearing (1.502" O.D.) | 1 |
| 49 | D-108394-45 | Sleeve Bearing (.878" O.D.) | 1 |
| 50 | B-122176 | Shaft - Right Pivot | 1 |
| 51 | PB-4-5 | Plug Button (1-1/2") | 1 |
| 52 | C-122195 | Shaft - Lock | 1 |
| 53 | B-122196 | Collar - Shaft | 1 |
| 54 | B-123812 | Magnet - Ring | 1 |
| 55 | B-122197 | Handle - Lock | 1 |
| 56 | B-123173 | Knob | 1 |
| 57 | A-123908 | Frame & Tilt Label Assy. (Incls. items #1, 2, 43, 44, 47, 48 & 49) | 1 |
| 58 | C-122164 | Foot (#1) | 2 |
| 59 | B-123772 | Plug - Vent | 1 |
| 60 | C-122165 | Foot (#2) | 2 |
| 61 | WS-21-9 | Washer | 4 |
| 62 | SC-90-79 | Fin. Bolt - 1/2"-13 x 1" Hex Hd. | 4 |




BRAKE AND BOWL UNIT

## BRAKE AND BOWL UNIT

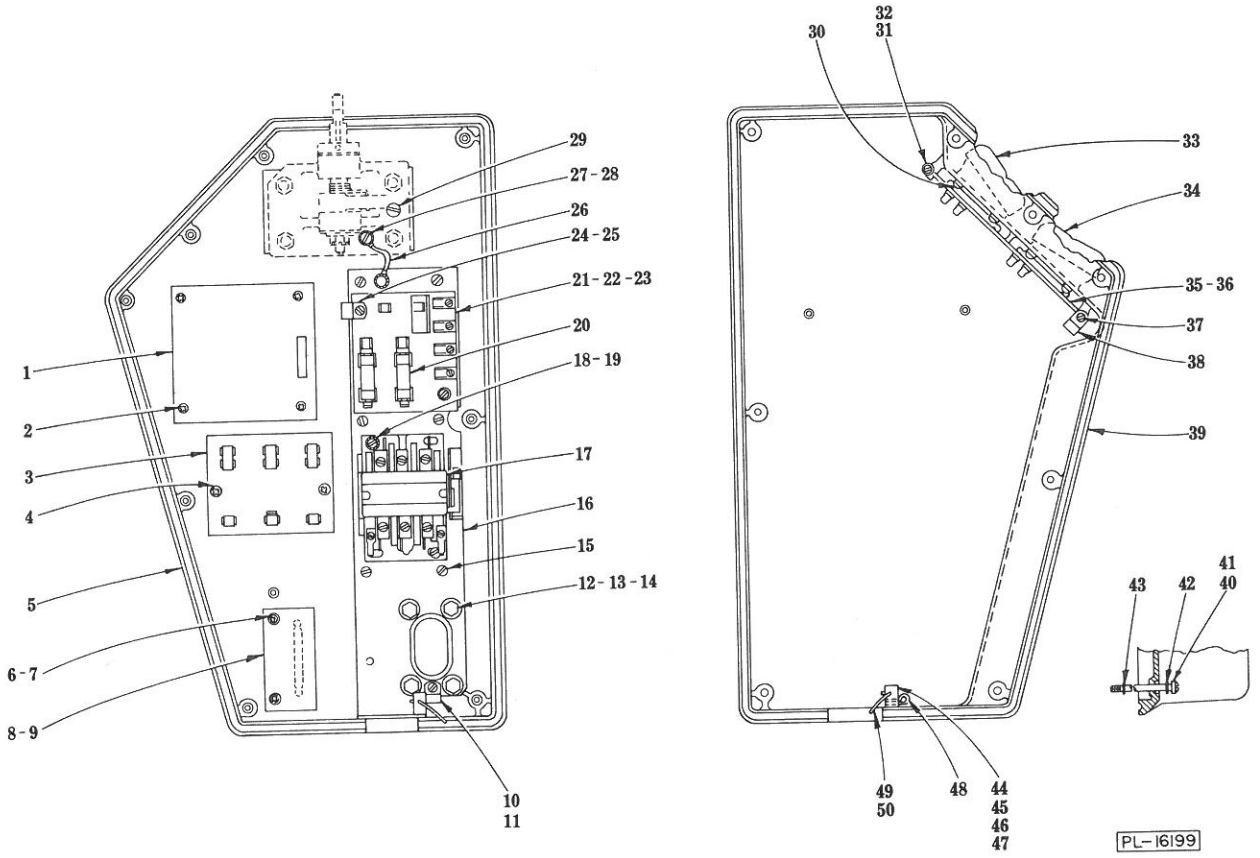
| ILLUS. PL-16080 | PART NO. | NAME OF PART | AMT. |
|---|---|---|---|
| 1 | SC-55-1 | Set Screw - #10-24 x 1/4" Soc. Hdls., Cup Pt. | 1 |
| 2 | C-122296 | Knob - Retainer | 1 |
| 3 | B-122293 | Shaft - Extension | 1 |
| 4 | E-122271 | Strainer Basket (HCM-300) | 1 |
| 5 | E-122272 | Strainer Basket (HCM-450) | 1 |
| 6 | B-122281 | Pin - Lid Guide | 1 |
| 7 | NS-18-1 | Jam Nut - 1/4"-20 Hex Fin. | 1 |
| 8 | E-122237 | Bowl Assy. (HCM-300) | 1 |
| 9 | E-122245 | Bowl Assy. (HCM-450) | 1 |
| 10 | B-122313 | Retainer - Seal | 1 |
| 11 | B-123074-4 | Seal - "V" Ring | 1 |
| 12 | SC-18-11 | Mach. Screw - #10-24 x 3/8" Pan Hd. | 2 |
| 13 | C-122208 | Cover - Brake | 1 |
| 14 | D-67500-28 | "O" Ring | 1 |
| 15 | B-122203 | Block - Clamp | 1 |
| 16 | C-122202 | Brake Clamp Assy. | 1 |
| 17 | WL-8-22 | Lock Washer - 5/16" Int. Shakeproof | 1 |
| 18 | SC-109-75 | Fin. Bolt - 15/16"-18 x 2-3/8" Hex Hd. | 1 |
| 19 | C-123571 | Brake Shoe & Lining Assy. | 2 |
| 20 | B-123095 | Spring - Compression | 4 |
| 21 | WS-18-30 | Washer | 4 |
| 22 | RR-9-10 | Retaining Ring | 4 |
| 23 | SC-89-35 | Cap Screw - 3/8"-16 x 1-1/4" Soc. Fil. Hd. | 4 |
| 24 | WL-4-6 | Lock Washer - 3/8" x .141" x .094" | 4 |
| 25 | B-122523 | Seal - Shaft | 1 |
| 26 | WL-3-47 | Lock Washer - 5/16" x .125" x .078" | 1 |
| 27 | NS-13-14 | Full Nut - 5/16"-18 Hex Fin. | 1 |




BOWL LID UNIT

## BOWL LID UNIT

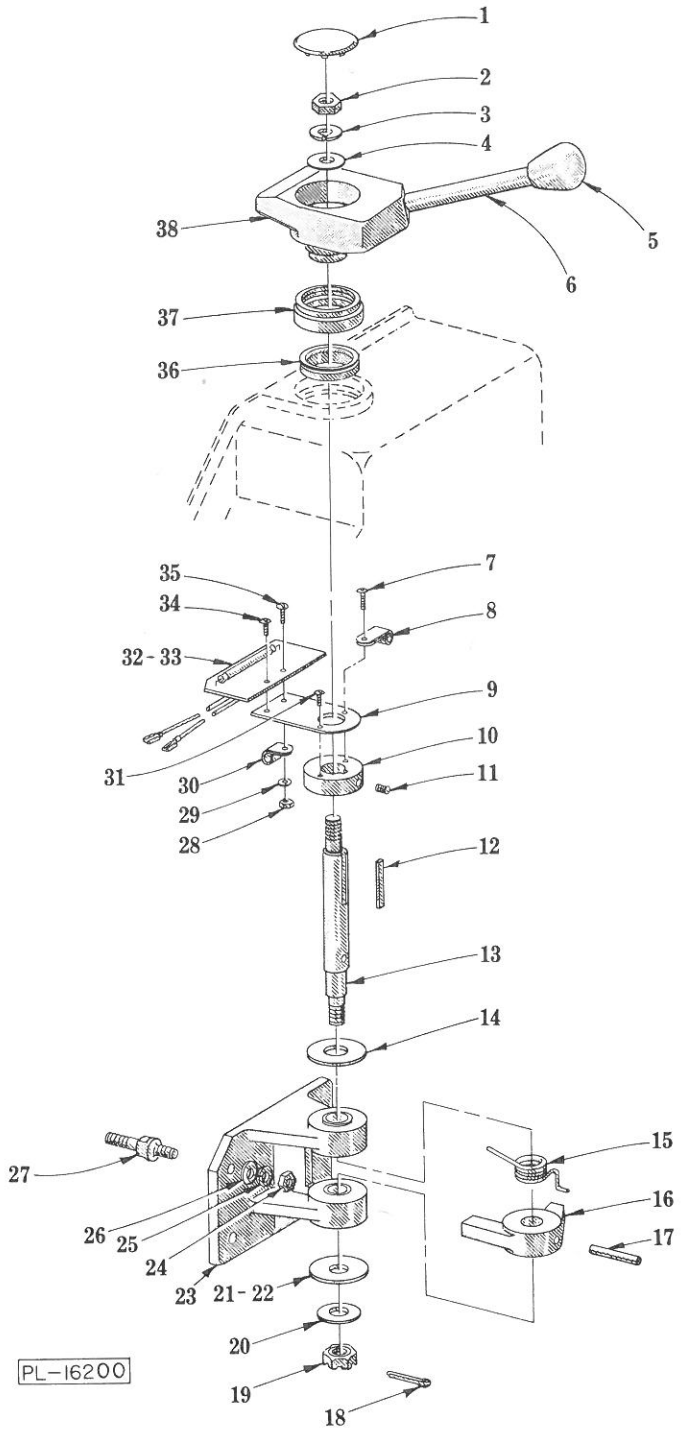
| ILLUS. PL-16078 | PART NO. | NAME OF PART | AMT. |
|---|---|---|---|
| 1 | B-123174 | Knob | 1 |
| 2 | B-124356 | Stud - Handle | 1 |
| 3 | B-124469 | Insert - Handle | 1 |
| 4 | C-122280 | Handle - Baffle | 1 |
| 5 | B-110544-7 | Bushing (.718" O.D.) | 1 |
| 6 | A-123911-2 | Lid Handle, Labels & Bushing Assy. (HCM-300) (Incls. items #5 & 8) | 1 |
| 7 | A-123911-1 | Lid Handle, Labels & Bushing Assy. (HCM-450) (Incls. items #5 & 8) | 1 |
| 8 | B-110544-8 | Bushing (1.656" O.D.) | 1 |
| 9 | B-123666 | Spring Cap Assy. | 1 |
| 10 | C-122267 | Spring - Torsion | 1 |
| 11 | B-122265 | Shaft - Spring Pivot | 1 |
| 12 | D-108394-44 | Sleeve Bearing (.878" O.D.) | 1 |
| 13 | B-122310 | Sleeve | 1 |
| 14 | D-108394-44 | Sleeve Bearing (.878" O.D.) | 1 |
| 15 | B-122264 | Bumper - Lid | 1 |
| 16 | B-122262 | Bearing - Baffle | 1 |
| 17 | B-123828 | Gasket - Baffle Bearing | 1 |
| 18 | C-122209-2 | Scraper (HCM-300) | 1 |
| 19 | C-122209-1 | Scraper (HCM-450) | 1 |
| 20 | E-123757 | Baffle Bar & Blade Assy. (HCM-300) | 1 |
| 21 | E-123033 | Baffle Bar & Blade Assy. (HCM-450) | 1 |
| 22 | E-122253 | Lid (HCM-300) | 1 |
| 23 | E-122254 | Lid (HCM-450) | 1 |
| 24 | SC-25-28 | Mach. Screw - #10-32 x 3/4" Bind. Hd. | 3 |
| 25 | B-123172 | Handle | 1 |
| 26 | SC-53-2 | Mach. Screw - #10-24 x 1/2" Truss Hd. | 2 |
| 27 | SC-22-32 | Mach. Screw - 1/4"-20 x 1/2" Flat Hd. | 2 |
| 28 | C-122226 | Plate - Lock | 1 |
| 29 | D-123580 | Stop Switch Assy. | 1 |
| 30 | B-122587 | Bushing - Cap | 1 |
| 31 | C-122315 | Pin - Baffle Lock | 1 |
| 32 | SC-64-15 | Set Screw - 1/4"-20 x 1/2" Hdls., Oval Pt. "Nylok" | 1 |
| 33 | B-122586 | Handle - Baffle Lock | 1 |
| 34 | M-77401 | Knob | 1 |




CONTROL BOX UNIT

## CONTROL BOX UNIT

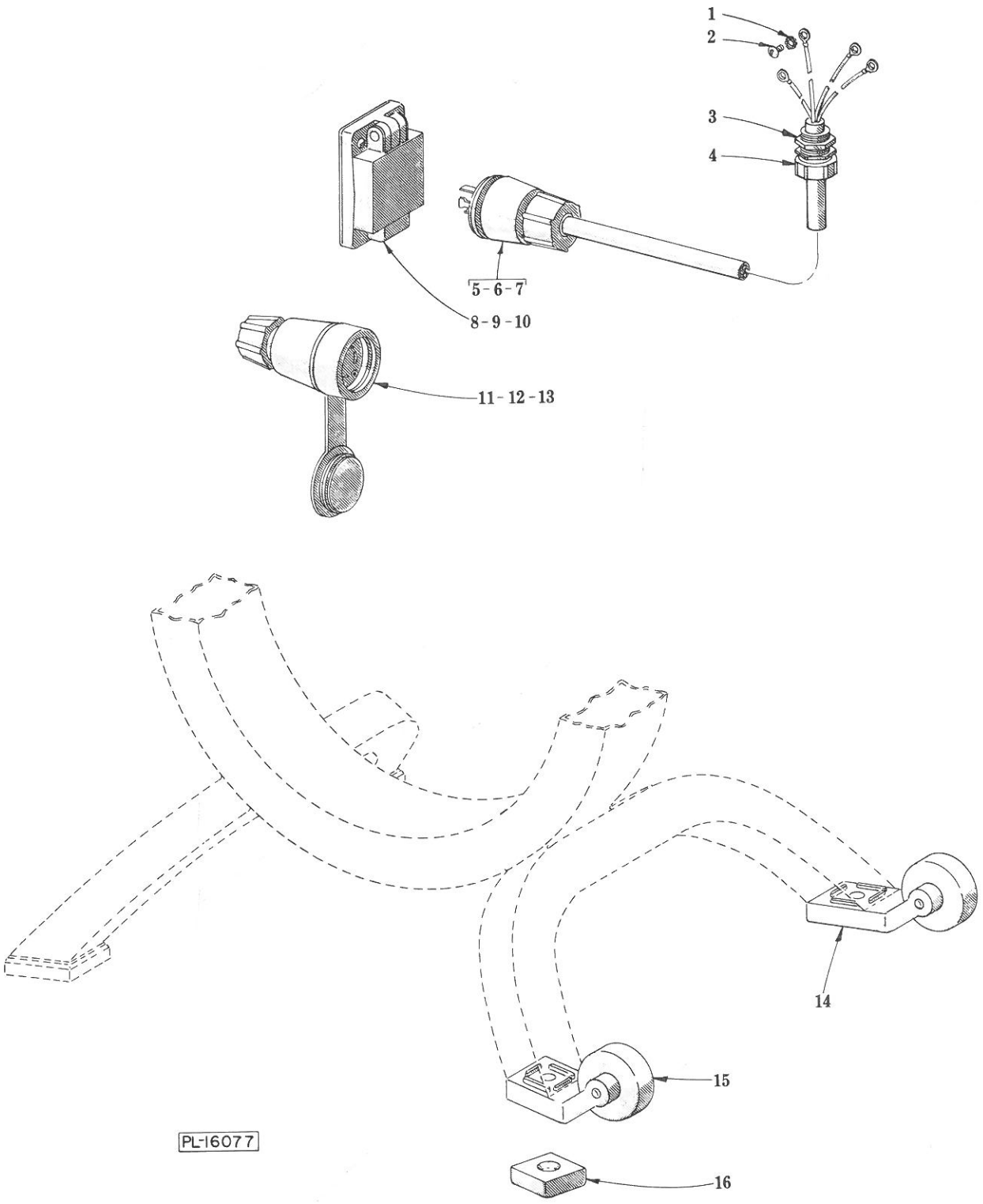
| ILLUS. PL-16199 | PART NO. | NAME OF PART | AMT. |
|---|---|---|---|
| 1 | E-119990 | Motor Protection Board Assy. | 1 |
| 2 | SD-13-7 | Self-Tapping Screw - #6-20 x 5/16" Phil. Pan Hd., Type 25 | 4 |
| 3 | C-121014 | Board - Terminal | 1 |
| 4 | SD-33-5 | Self-Tapping Screw - #10-16 x 1/2" Rd. Hd., Type 25 | 2 |
| 5 | A-123909 | Control Box & Label Assy. | 1 |
| 6 | SD-13-7 | Self-Tapping Screw - #6-20 x 5/16" Phil. Pan Hd., Type 25 | 2 |
| 7 | WS-28-1 | Washer | 2 |
| 8 | C-122218 | Reed Mounting Board Assy. (Incls. item #9) | 1 |
| 9 | C-111964 | Switch - Reed | 1 |
| 10 | C-78752-6 | Clamp | 1 |
| 11 | SC-9-49 | Mach. Screw - #6-32 x 3/8" Rd. Hd. | 1 |
| 12 | SC-62-61 | Fin. Bolt - 5/16"-18 x 1" Hex Hd. | 4 |
| 13 | WL-3-47 | Lock Washer - 5/16" x .125" x .078" | 4 |
| 14 | WS-22-21 | Washer | 4 |
| 15 | SD-33-4 | Self-Tapping Screw - #10-16 x 3/8" Rd. Hd., Type 25 | 6 |
| 16 | D-124042 | Control Mounting Bracket Assy. | 1 |
| 17 | B-121926-2 | Contactor | 1 |
| 18 | SC-8-9 | Mach. Screw - #10-24 x 3/8" Rd. Hd. | 2 |
| 19 | WL-7-12 | Lock Washer - #10 Ext. Shakeproof | 1 |
| 20 | FE-19-48 | Fuse - Fiber Tube (.8 Amp., BBS-.8) | 2 |
| 21 | C-117034-1 | Power Input Board Assy. | 1 |
| 22 | SC-8-9 | Mach. Screw - #10-24 x 3/8" Rd. Hd. | 2 |
| 23 | WL-7-12 | Lock Washer - #10 Ext. Shakeproof | 1 |
| 24 | C-78752-11 | Clamp | 1 |
| 25 | SC-7-68 | Mach. Screw - #8-32 x 5/8" Rd. Hd. | 1 |
| 26 | C-123648-6 | Lead Wire Assy. (Ground) | 1 |
| 27 | SC-8-9 | Mach. Screw - #10-24 x 3/8" Rd. Hd. | 2 |
| 28 | WL-7-12 | Lock Washer - #10 Ext. Shakeproof | 2 |
| 29 | SD-33-5 | Self-Tapping Screw - #10-16 x 1/2" Rd. Hd., Type 25 | 1 |
| 30 | SD-32-3 | Self-Tapping Screw - #6-19 x 3/8" Phil. Pan Hd. "Plastite" | 4 |
| 31 | SD-32-35 | Self-Tapping Screw - #6-20 x 1/4" Pan Hd., Type 25 | 1 |
| 32 | WS-28-1 | Washer | 1 |
| 33 | D-120872-2 | Switch Assy. (Start) | 1 |
| 34 | D-120872-3 | Switch Assy. (Jog/Run) | 1 |
| 35 | D-122224 | Reed Mounting Board Assy. (Incls. item #36) | 1 |
| 36 | C-111964 | Switch - Reed | 2 |
| 37 | SD-33-3 | Self-Tapping Screw - #6-20 x 1/2" Rd. Hd., Type 25 | 1 |
| 38 | C-78752-6 | Clamp | 1 |
| 39 | A-123910 | Control Box Lid & Logo Assy. | 1 |
| 40 | SC-110-6 | Cap Screw - #10-24 x 1-3/4" Fil. Hd. | 5 |
| 41 | SC-110-33 | Mach. Screw - #10-24 x 4-1/2" Fil. Hd. | 3 |
| 42 | WS-29-20 | Washer | 8 |
| 43 | D-67500-38 | "O" Ring | 8 |
| 44 | B-122268 | Bracket - Cable | 1 |
| 45 | SC-21-10 | Mach. Screw - #6-32 x 1/2" Rd. Hd. | 1 |
| 46 | WL-3-9 | Lock Washer - #6 x .047" x .031" | 1 |
| 47 | NS-9-7 | Mach. Nut - #6-32 Hex | 1 |
| 48 | C-78752-6 | Clamp | 1 |
| 49 | B-118234-5 | Cable (5.625" Lg.) | 1 |
| 50 | B-118233 | Ferrule (Double) | 2 |




HANDLE LOCK UNIT

## HANDLE LOCK UNIT

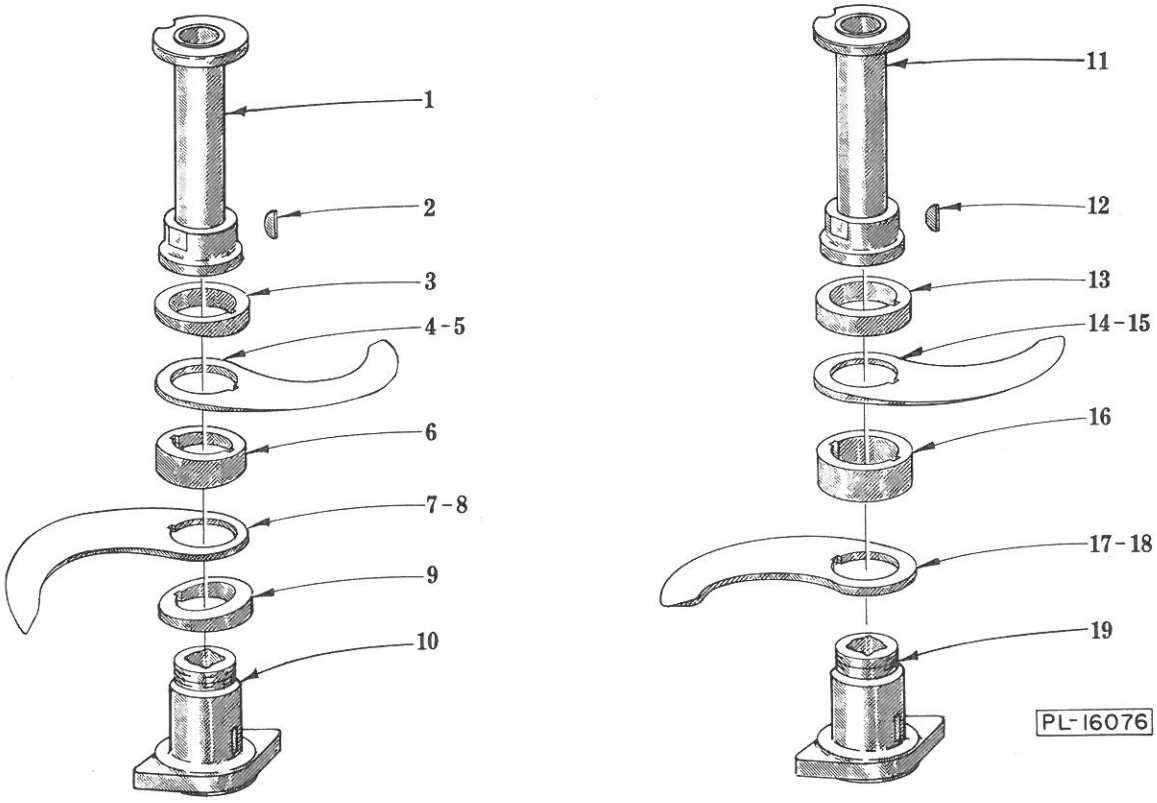
| ILLUS. PL-16200 | PART NO. | NAME OF PART | AMT. |
|---|---|---|---|
| 1 | PB-4-3 | Plug Botton (1-1/8") | 1 |
| 2 | NS-15-11 | Full Nut - 5/16"-18 Hex Fin. | 1 |
| 3 | WL-6-23 | Lock Washer - 5/16" x .125" x .078" | 1 |
| 4 | WS-29-17 | Washer | 1 |
| 5 | B-123173 | Knob | 1 |
| 6 | B-122228 | Handle - Lid Lock | 1 |
| 7 | SC-9-49 | Mach. Screw - #6-32 x 3/8" Rd. Hd. | 1 |
| 8 | C-78752-11 | Clamp | 1 |
| 9 | B-122216 | Bracket - Reed | 1 |
| 10 | B-122214 | Collar | 1 |
| 11 | SC-47-76 | Set Screw - #6-32 x 1/4" Soc. Hdls., Cup Pt. | 1 |
| 12 | R-12430-25 | Key | 1 |
| 13 | C-122215 | Shaft - Lock | 1 |
| 14 | B-122220 | Washer | 1 |
| 15 | B-123097 | Spring - Torsion | 1 |
| 16 | C-122213 | Stop - Handle Lock | 1 |
| 17 | RP-2-7 | Rollpin - 3/16" Dia. x 1-1/8" Lg. | 1 |
| 18 | PC-3-74 | Cotter Pin - 3/32" x 3/4" | 1 |
| 19 | NS-46-6 | Full Nut - 5/16"-18 Hex Fin. | 1 |
| 20 | WS-17-1 | Washer | 1 |
| 21 | B-122220 | Washer | 1 |
| 22 | B-122219 | Washer | As Reqd. |
| 23 | C-123579 | Lock Bracket & Bearing Assy. | 1 |
| 24 | NS-13-14 | Full Nut - 5/16"-18 Hex Fin. | 4 |
| 25 | WL-3-47 | Lock Washer - 5/16" x .125" x .078" | 4 |
| 26 | WS-22-21 | Washer | 4 |
| 27 | B-122222 | Stud | 4 |
| 28 | NS-9-7 | Mach. Nut - #6-32 Hex | 2 |
| 29 | WL-8-2 | Lock Washer - #6 Int. Shakeproof | 2 |
| 30 | C-78752-11 | Clamp | 1 |
| 31 | SC-9-70 | Mach. Screw - #6-32 x 1/4" Rd. Hd. | 1 |
| 32 | C-122217 | Reed Mounting Board Assy. (Incls. item #33) | 1 |
| 33 | C-111964 | Switch - Reed | 1 |
| 34 | SC-9-70 | Mach. Screw - #6-32 x 1/4" Rd. Hd. | 1 |
| 35 | SC-9-49 | Mach. Screw - #6-32 x 3/8" Rd. Hd. | 1 |
| 36 | B-123074-5 | Seal - "V" Ring | 1 |
| 37 | B-123221 | Insert - Cover | 1 |
| 38 | D-122227 | Hub - Lock | 1 |




MISCELLANEOUS

## MISCELLANEOUS

| ILLUS. PL-16077 | PART NO. | NAME OF PART | AMT. |
|---|---|---|---|
| 1 | WL-7-12 | Lock Washer - #10 Ext. Shakeproof | 1 |
| 2 | SC-8-9 | Mach. Screw - #10-24 x 3/8" Rd. Hd. | 1 |
| 3 | FE-7-12 | Lock Nut - 3/4" Cnd. | 1 |
| 4 | FE-14-14 | Strain Relief | 1 |
| 5 | C-117612-8 | Cord & Plug Assy. (230 V.) | 1 |
| 6 | C-117612-9 | Cord & Plug Assy. (460 V.) | 1 |
| 7 | C-122292-1 | Cord & Plug Assy. (200 V.) (Not Shown) | 1 |
| 8 | C-117631-1 | Receptacle (230 V.) | 1 |
| 9 | C-117631-2 | Receptacle (460 V.) | 1 |
| 10 | A-123816 | Receptacle & Cover Assy. (200 V.) (Not Shown) | 1 |
| 11 | C-117625-1 | Connector (230 V.) | 1 |
| 12 | C-117625-2 | Connector (460 V.) | 1 |
| 13 | A-123805 | Connector & Cover Assy. (200 V.) (Not Shown) | 1 |
| 14 | C-123658-2 | Caster Assy. (Right) | 1 |
| 15 | C-123658-1 | Caster Assy. (Left) | 1 |
| 16 | B-123813 | Pad - Caster | 2 |




## KNIFE UNIT

| ILLUS. PL-16076 | PART NO. | NAME OF PART | AMT. |
|---|---|---|---|
| 1 | C-124476 | Tube & Lock Nut Assy. | 1 |
| 2 | KW-4-1 | Key - #1008 Woodruff | 2 |
| 3 | B-122290 | Block - Single Angle | 1 |
| 4 | C-122294 | Knife (HCM-300) | 1 |
| 5 | C-122295 | Knife (HCM-450) | 1 |
| 6 | B-122291 | Block - Double Angle | 1 |
| 7 | C-122294 | Knife (HCM-300) | 1 |
| 8 | C-122295 | Knife (HCM-450) | 1 |
| 9 | B-122290 | Block - Single Angle | 1 |
| 10 | D-124265 | Hub - Square Drive | 1 |
| 11 | C-124476 | Tube & Lock Nut Assy. | 1 |
| 12 | KW-4-1 | Key - #1008 Woodruff | 2 |
| 13 | B-123773 | Spacer - Top | 1 |
| 14 | C-123827 | Blade - Knead/Mix (HCM-300) | 1 |
| 15 | C-123826 | Blade - Knead/Mix (HCM-450) | 1 |
| 16 | B-123774 | Spacer - Middle | 1 |
| 17 | C-123827 | Blade - Knead/Mix (HCM-300) | 1 |
| 18 | C-123826 | Blade - Knead/Mix (HCM-450) | 1 |
| 19 | D-124265 | Hub - Square Drive | 1 |
| | D-124408-2 | Cut/Mix Shaft Assy. (HCM-300) (Incls. items #1 thru 4, 6, 7, 9 & 10) | 1 |
| | D-124408-1 | Cut/Mix Shaft Assy. (HCM-450) (Incls. items #1, 2, 3, 5, 6, 8, 9 & 10) | 1 |
| | D-124407-2 | Knead/Mix Shaft Assy (HCM-300) (Incls. items #11 thru 14, 16, 17 & 19) | 1 |
| | D-124407-1 | Knead/Mix Shaft Assy. (HCM-450) (Incls. items #11, 12, 13, 15, 16, 18 & 19) | 1 |